Notes on Exam 4, Math 544, Fall 2005

1. Exam 4 is Tuesday, November 22 and it covers sections 3.4-3.7, 4.1-4.7, 5.2-5.3.

2. Be able to define "column space", "null space", "basis", "dimension", "linearly independent", "linearly dependent", "non-singular", and "span", "linear transformation", "eigenvalue", "eigenvector","orthogonal set", "diagonalizable".

3. Be able to state and use four theorems about dimension.

4. Be able to state and use the Non-singular Matrix Theorem. (I have also called this the Invertible Matrix Theorem.) This result consists of a huge number of equivalent statements.

5. The material on the old exams which is covered on your exam 4:
   (a) Exam 1's:
   97: 10.
   01: 8.
   02: 6, 7, 8, 9, 10.
   Spring 03: 5, 6, 10.
   Summer 05: 6.
   (b) Exam 2's:
   97: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.
   98: 1, 2, 3, 7, 8, 10.
   01: 2, 3, 4, 5, 6, 8.
   02: 2, 3, 4, 5, 6, 10.
   Spring 03: 1, 2, 3, 5, 6, 7, 8.
   Summer 03: 1, 2, 3, 6, 7, 8.
   04: 4, 5, 6, 7, 8, 9, 10.
   summer 05: 2, 4, 7.
   fall 05: 3, 4, 5, 6, 7, 9, 10.
   (c) Exam 3's:
   97: 2, 3, 4, 5, 6, 7, 8.
   98: 2, 4, 5, 9.
   01: 3, 6, 7, 8, 9.
   02: 1, 2, 3, 4, 5, 7, 8, 9, 10.
   Spring 03: 1, 2, 3, 4, 5, 6, 7, 8, 9.
   Summer 03: 1, 2, 3, 4, 5, 6, 7, 8, 9.
   04: 1, 2, 3, 4, 5, 6, 7, 8, 9.
   summer 05: 1, 2, 3, 4, 5, 6, 7.
   fall 05: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.
   (d) Exam 4's:
   97: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.
   98: 1, 2, 3, 5, 6, 7, 8, 9.
   01: 1, 2, 3, 4, 5, 8, 9, 10.
   02: 1, 2, 3, 4, 5, 6, 8, 9.
   Spring 03: 1, 2, 3, 4, 5, 6, 7, 8.
   Summer 03: 1, 2, 3, 4, 5, 6, 7, 8, 9.
   04: 1, 4, 5, 6.
   summer 05: 1, 2, 3, 4, 5, 6, 7.

97: 1, 2, 3, 4, 6, 7, 8, 10, 11, 12, 13, 17.
98: 1, 3, 7, 8, 9, 10, 11, 12, 13 14, 15, 16, 17.
01: 1, 2, 4, 5, 7, 8, 9, 10abcd, 11, 12, 13, 14.
02: 1, 3, 4, 6, 7, 9, 11, 12, 13, 14, 16, 17, 18.
Spring 03: 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 18, 20.
Summer 03: 1, 2, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 16, 17defgh.
04: 1cdefg, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14.
summer 05: 1cdefg, 3, 4, 5, 6, 7, 11.